

BIOCHEMISTRY

REQUIREMENTS

CORE CURRICULUM The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at marshall.edu/gened.

CORE 1: CRITICAL THINKING

CODE	COURSE NAME	HRS	GRADE
FYS 100	First Year Seminar	3	_____
MTH 229	Critical Thinking Course	5	_____
_____	Critical Thinking Course	3	_____
Additional University Requirements			
_____	Writing Intensive (CHM 357 or 358)	4	_____
_____	Writing Intensive	3	_____
_____	Multicultural or International	3	_____
CHM 491	Capstone	2	_____

CORE 2:

CODE	COURSE NAME	HRS	GRADE
ENG 101	Beginning Composition	3	_____
ENG 201	Advanced Composition	3	_____
CMM 103	Fund Speech-Communication	3	_____
MTH 229	Calculus/Analytic Geom I (CT)	5	_____
BSC 120/L	Principles of Biology I / Lab	3/1	_____
_____	Core II Humanities	3	_____
_____	Core II Social Science	3	_____
_____	Core II Fine Arts	3	_____

MAJOR-SPECIFIC

All Biochemistry majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
BSC 120/L	Principles of Biology I / Lab	3/1	_____	BSC 322	Principles of Cell Biology	4	_____
BSC 121/L	Principles of Biology II / Lab	3/1	_____	BSC 324	Principles of Genetics	4	_____
CHM 211	Principles of Chemistry I	3	_____	PHY 201	College Physics I	3	_____
CHM 217	Principles of Chemistry I Lab	2	_____	PHY 202	College Physics I Lab	1	_____
CHM 212	Principles of Chemistry II	3	_____	PHY 203	College Physics II	3	_____
CHM 218	Principles of Chemistry II Lab	2	_____	PHY 204	College Physics II Lab	1	_____
CHM 355	Organic Chemistry I	3	_____	MTH 229	Calculus/Analytic Geom I (CT)	5	_____
CHM 356	Organic Chemistry II	3	_____	_____	Biochemistry Elective	3-4	_____
CHM 361	Organic Chemistry II Lab	3	_____	_____	Biochemistry Elective	3-4	_____
CHM 305	Research Methods Chemistry	1	_____	_____	Biochemistry Elective	3-4	_____
CHM 358	Physical Chemistry (or 357 in Fall)	4	_____	_____	Biochemistry Elective	3-4	_____
CHM 365	Introductory Biochemistry	3	_____	_____	Free Elective	3	_____
CHM 366	Intro Biochemistry Lab	2	_____	_____	Free Elective	3	_____
CHM 467	Intermediate Biochemistry	3	_____	_____	Free Elective	3	_____
CHM 491	Capstone	2	_____	_____	Free Elective	2	_____
CHM 432	Seminar	0	_____				

MAJOR INFORMATION

- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- In addition to the Core General Education requirements, the College of Science requires 3 hours of Calculus, and 40 hours of upper level credit.
- Coursework listed as "elective" may vary for each student. Students are encouraged to use elective hours toward a 2nd minor or toward prerequisites.
- Students are strongly encouraged to select courses that meet two or more Core or College requirements. For example, a writing intensive literature course could satisfy the Core II Humanities requirement as well as the University writing intensive requirement.
- Course offerings and course attributes are subject to change each semester. Please consult each semesters schedule of courses for availability and attributes.
- Math is based on an ACT Mathematics score of 27 or higher. Students with an ACT Mathematics score less than 27 will be placed in the appropriate prerequisite mathematics and science courses.
- CHM 358 or 411 is recommended for students considering graduate school.
- The BSC coursework provides a Biological Sciences minor.
- A Grade Point Average of 2.0 is required 1) overall, 2) at MU, 3) in all required Chemistry courses, 4) in all Chemistry courses, and 5) in all required Chemistry courses taken at MU.
- Biochemistry Electives: Select from the following courses. At least one course must be 4 credit hours, and at least one must be a CHM course. BSC 302, 422, 428, 443, 448, 450, 456, CHM 345, 357, 358, 411, 448, 451, 465, 466.
- Double majors within the Department of Chemistry may include any majors other than the B.S., Major in Chemical Sciences. A double major of Forensic Chemistry with Biochemistry is also currently not permitted.

Area of Emphasis

Major Requirement















College Requirement

General Education Requirement

Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

BIOCHEMISTRY

Students completing the Biochemistry major will be prepared for career opportunities in the biotechnology, forensics, environmental, pharmaceutical, agricultural, and medical fields. Students will also be well prepared for graduate-level study in biochemistry, biotechnology, and genetics and molecular biology. Additionally, Biochemistry is an excellent choice for students desiring to attend professional training in Medicine, Dentistry, Pharmacy, Law or Engineering.

FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
 CHM 211	Principles of Chemistry I	3	◆	_____	 BSC 121/L	Principles of Biology II / Lab	3/1	◆	_____	
 CHM 217	Principles of Chemistry I Lab	2	◆	_____	 CHM 212	Principles of Chemistry II	3	◆	_____	
 BSC 120/L	Principles of Biology I / Lab	3/1	◆ ●	_____	 CHM 218	Principles of Chemistry II Lab	2	◆	_____	
ENG 101	Beginning Composition	3	●	_____	MTH 229	Calculus/Analytic Geom I (CT)	5	◆ ●	_____	
FYS 100	First Year Sem Crit Thinking	3	●	_____						
UNI 100	Freshman First Class	1		_____						
TOTAL HOURS				16	TOTAL HOURS				14	
Summer Term (optional):										
FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
_____	Core I Critical Thinking	3	●	_____	BSC 324	Principles of Genetics	4	◆	_____	
CHM 355	Organic Chemistry I	3	◆	_____	 CHM 356	Organic Chemistry II	3	◆	_____	
 ENG 201	Advanced Composition	3	●	_____	 CHM 361	Organic Chemistry Lab	3	◆	_____	
_____	Free Elective	3		_____	 CMM 103	Fund Speech Communication	3	●	_____	
_____	Free Elective	3		_____	_____	Core II Fine Arts	3	●	_____	
TOTAL HOURS				15	TOTAL HOURS				16	
Summer Term (optional):										
FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
 BSC 322	Principles of Cell Biology	4	◆	_____	 CHM 366	Intro Biochemistry Lab	2	◆	_____	
CHM 305	Research Methods Chemistry	1	◆	_____	CHM 467	Intermediate Biochemistry	3	◆	_____	
CHM 365	Introductory Biochemistry	3	◆	_____	PHY 203	College Physics II	3	◆	_____	
 PHY 201	College Physics I	3	◆	_____	PHY 204	College Physics II Lab	1	◆	_____	
 PHY 202	College Physics I Lab	1	◆	_____	_____	Core II Humanities	3	●	_____	
_____	Core II Social Science (MC/I)	3	●	_____	_____	Biochemistry Elective	3-4	◆	_____	
TOTAL HOURS				15	TOTAL HOURS				15	
Summer Term (optional):										
FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
CHM 491	Capstone Experience (or CHM 490)	2	◆	_____	CHM 432	Chemistry Seminar	0	◆	_____	
_____	Writing Intensive	3	●	_____	_____	Biochemistry Elective	3-4	◆	_____	
_____	Biochemistry Elective (CHM Course) or Free Elective	3-4	◆	_____	CHM 358	Physical Chemistry (or 357 in Fall)	4	◆	_____	
_____	Biochemistry Elective or Free Elective	3-4	◆	_____	_____	Biochemistry Elective (CHM Course)	3-4	◆	_____	
_____	Free Elective	2		_____	_____	Biochemistry Elective (CHM Course) or Free Elective	3-4	◆	_____	
TOTAL HOURS				13-15	TOTAL HOURS				16-19	
Summer Term (optional):										

◆ Area of Emphasis

◆ Major Requirement

■ College Requirement

● General Education Requirement

Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.